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United States Patent [19]

Thompson et al.

[11] **Patent Number:** **6,030,715**[45] **Date of Patent:** **Feb. 29, 2000**[54] **AZLACTONE-RELATED DOPANTS IN THE EMISSIVE LAYER OF AN OLED**

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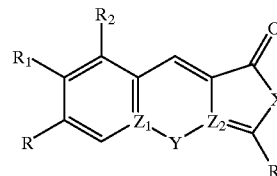
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[57] **ABSTRACT**

Organic light emitting devices are disclosed which are comprised of a heterostructure for producing electroluminescence wherein the heterostructure is comprised of an emissive layer containing a dopant compound selected from the class of azlactone-related compounds having the chemical structure as represented by formula I:



where R is hydrogen or a donor or acceptor group relative to hydrogen;

R'=alkyl or substituted or unsubstituted aryl;

R₁ and R₂ are hydrogen or are joined to form a fused aryl ring;

X is O; NR₅, where R₅ is hydrogen or substituted or unsubstituted alkyl; alkyl or substituted or unsubstituted aryl;

Z₁ and Z₂ are, independently of one another, a carbon or nitrogen atom; and

Y is M, a metal atom, whenever Z₁ and Z₂ are both nitrogen atoms;

Y is O; NR₆, where R₆ is hydrogen or substituted or unsubstituted alkyl; or S; whenever either Z₁ or Z₂ is a carbon atom; or

Y is absent.

19 Claims, 1 Drawing Sheet